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PICTURE-KEY TO THE GENERA OF AQUATIC MIDGES

William L. Klein, Jr.

Federal Water Pollution Control
Administration
Cincinnati, Ohio

November 1967

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PICTURE-KEY TO THE GENERA OF AQUATIC MIDGES

by

William L. Klein, Jr.
Biological Laboratory Aide

LABORATORY INVESTIGATIONS NUMBER 5

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Technical Advisory and Investigations Branch
Federal Water Pollution Control Administration
United States Department of the Interior
5555 Ridge Avenue
Cincinnati, Ohio

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FOREWORD

The Laboratory Investigations series was initiated by the Technical Advisory and Investigations Branch in 1963. The series was planned to describe laboratory methods and techniques and to disseminate information that may be of interest and use to other activities of FWPCA.

The current addition to the series is a pictorial approach to the identification of aquatic larval midges (bloodworms). Some of these organisms are able to live in areas that are defiled by pollutants; their recognition and identification is of great importance to the water pollution investigator.

November 1967

INTRODUCTION

The classification of aquatic midge larvae is a difficult and time-consuming procedure for the ecologist who may not be familiar with the language of the taxonomist. A picture can save many words and prevent much confusion.

The procedure presented herein for the identification of larvae of the family Chironomidae to genus is based solely on drawings of the labial plates. These should be an aid to the beginning taxonomist until he develops the expertise to utilize the formal literature for more definitive identification.

Much of the material and information in this article has been obtained and composited from the definitive works by Johannsen, Roback, Curry, and Wirth and Stone. Wirth and Stone have contributed a chapter in the "Aquatic Insects of California," edited by Usinger; for convenience, their work is cited as "Usinger." The works of various other authors were referred to in the preparation of this procedure and these are included in the bibliography.

For many years controversy existed over the use of the names Chironomus versus Tendipes, and Chironomidae versus Tendipedidae for genus and family names, respectively. In accordance with a 1963 opinion of the International Commission on Zoological Nomenclature, this article uses Chironomus and Chironomidae as the preferred names.

PROCEDURE

The determinative factor used in the procedure presented herein is the number of teeth on the labial plate. The larva's head is mounted ventral side up on a microscope slide and the number of teeth counted. (Clearing of the head, or slight pressure to crush the head, thus effecting exposure of the labial plate may be necessary for clear viewing). After determining the number of teeth the identifier refers to the tooth-number grouped illustrations and completes identification by matching the viewed labial plate with the illustrations.

Errors or confusion in tooth counts of the examined larval head may occur because the median tooth may be divided by one or two shallow notches, and the first pairs of teeth lateral to the median tooth may also contain notches. Usually this confusion can be eliminated by checking the group of illustrations for the alternative number of teeth.

The number given after the first generic name is the reference for the source of the illustration, where: 1 = Usinger, 2 = Roback, and 3 = Curry. The letters J (Johannsen), U (Usinger), C (Curry) and R (Roback) denote the name used by the various authors when synonymous nomenclature exists.

7 TEETH

Corynoneura (2)
(sp.2)

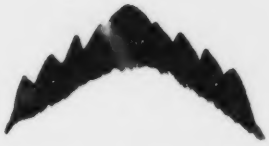
8 TEETH

No Known Genera

9 TEETH

Diamesa (2)
(bathyphila)

Corynoneura (2)
(sp.1)

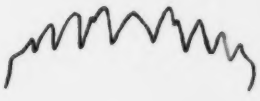


Cricotopus (2)
(sp.1)

Spaniotoma (1)-M,U,C
Smittia -R
(pacifica)

Spaniotoma (1) -J,U,C
Dactylocladius -R
(semivirens)

Spaniotoma (1) -J,U,C
Smittia -R
(stercoraria)



Pseudochironomus (1)
(richardsoni) variant

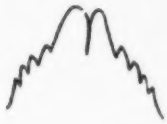
Pseudochironomus (1)
(richardsoni)

Chironomus (3) -J
Glyptotendopes -R,U,C

10 TEETH

Brillia (1)
(par)

Spaniotoma (1)
(furcata)

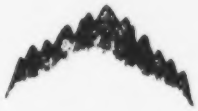


Spaniotoma (2) -J,U,C
Eukiefferiella -R
(sordens)

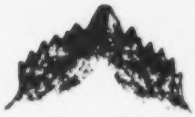
Chironomus (1) -J
Cryptochironomus -R,U,C
(sens. lat.)

II TEETH

Corynoneura (2)
(taris)

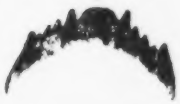


Cricotopus (2)
(trifasciatus sp. 1)

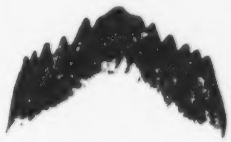


Cricotopus (2)
(trifasciatus sp. 2)

Spaniotoma (1) - J,U,C
Smittia -R
(nudipennis)



Spaniotoma (1) -J,U,C
Smittia -R
(aterrima)



Hydrobaeninae sp. (2)

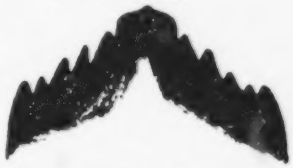
Spaniotoma (2) -J,U,C
Psectrocladius -R
(pilosus)

Spaniotoma (2) -J,U,C
Psectrocladius -R
(elatus)

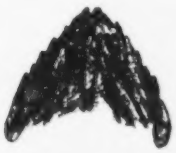
Spaniotoma (2) -J,U,C
Psectrocladius -R
(simulans)

Spaniotoma (2) -J,U,C
Psectrocladius -R
(sp. 2)

Spaniotoma (2) -J,U,C
Psectrocladius -R
(stratiotus)



Spaniotoma (2) -J,U,C
Eukiefferiella -R
(sp.1)



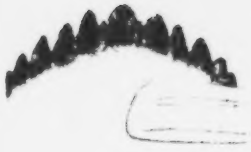
Spaniotoma (2) -J,U,C
Eukiefferiella -R
(sp.2)

Tanytarsus (2) -J
Calopsectra -R,U,C
(guerla)

Tanytarsus (3) -J
Calopsectra -R,U,C
(dives)

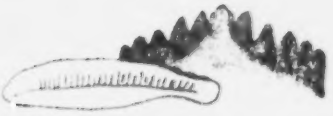
CONTINUED

II TEETH CONTINUED



Tanytarsus (2) -J
Calopsectra -R,U,C
(sp.3)

Tanytarsus (2) -J
Calopsectra -R,U,C
(sp.5)

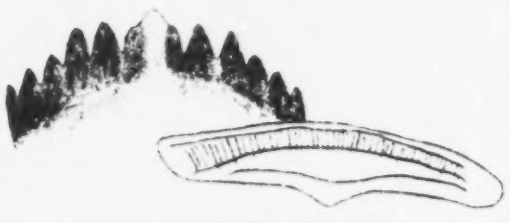


Tanytarsus (2) -J
Calopsectra -R,U,C
(glabrescens)

Tanytarsus (2) -J
Calopsectra -R,U,C
(sp.2)

Tanytarsus (2) -J
Calopsectra -R,U,C
(varela)

Tanytarsus (2) -J
Calopsectra -R,U,C
(sp.7)

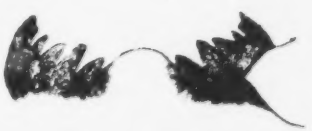


Tanytarsus (2) -J
Calopsectra -R,U,C
(polita)

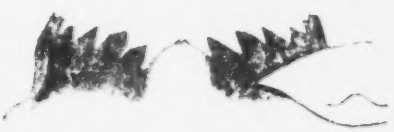
Chironomus (3) -J
Microtendipes -R,U,C
(pedellus)

Tanytarsus (1)
(exiguus)

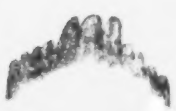
Tanytarsus (1) -J
Calopsectra -R,U,C
(dives)



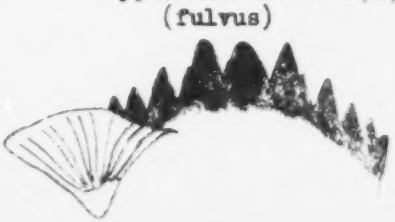
Chironomus (2) -J
Cryptochironomus -R,U,C
(fulvus)



Chironomus (2) -J
Cryptochironomus -R,U,C
(sp.3)



Chironomus sp. -J
Tendipes sp. -R,U,C

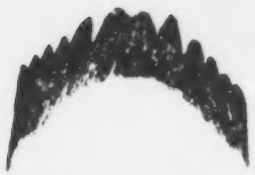


Chironomus (2) -J
Tendipes -R,U,C
(neomodestus)

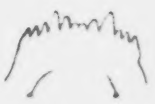
Chironomus (2) -J
Harnischia -R,U,C
(sp.2)

12 TEETH

Brillia (1)
(par)

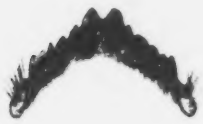


Metriocnemus sp. (2)

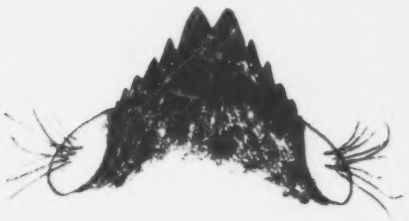


Metriocnemus (1)
(fuscipes)

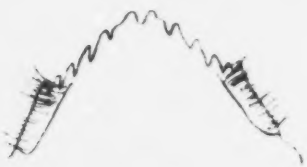
Spaniotoma (2) -J,U,C
Trichocladius -R
(sp.1)



Spaniotoma (2) -J,U,C
Trichocladius -R
(exatus)

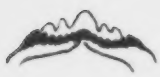


Spaniotoma (2) -J,U,C
Trichocladius -R
(sp.2)



Spaniotoma (1) -J,U,C
Psechroladius -R
(sp.A)

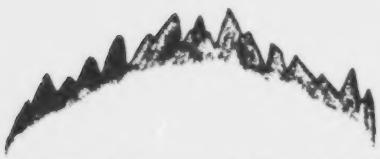
13 TEETH



Tanypus (3)
(stellata)

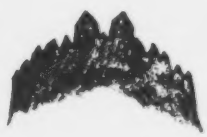
Procladius (3)
(adumbratus)

Diamesa (1)
(mendotae)



Syndiamesa (1) -J,R,U
(pertinax)

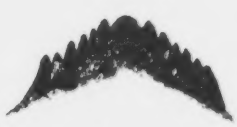
Corynoneura (2)
(xena)



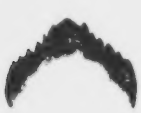
Brillia (2)
(sera)

Cricotopus (2)
(bicinctus)

Cricotopus (2)
(ceris)



Cricotopus (2)
(slossonae)



Cricotopus (2)
(sp.2)

Spaniotoma sp.

Spaniotoma (2)
(sp.3)

Spaniotoma (2)
(paradorenus)

Spaniotoma (2)
(sp.2)

Spaniotoma (2)
(sp.1)

CONTINUED

13 TEETH CONTINUED

Spaniotoma (2)
(carlatus)

Spaniotoma (1)- J,U,C
Trichocladius- R
(senex)

Spaniotoma (2)- J,U,C
Psectrocladius- R
(sp. 4)

Spaniotoma (2) -J,U,C
Psectrocladius -R
(nigrus)

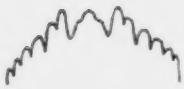
Spaniotoma (2) -J,U,C
Psectrocladius -R
(sp.1)

Spaniotoma (2) -J,U,C
Trichocladius -R
(senex)

Chiromomini (2)
(sp.A)

Tanytarsus (1)
(sp.J)

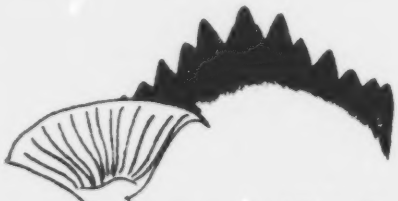
Chironomus (1)
(decorus)



Chironomus (1)
(decorus) variant

Chironomus (1) -J
Harnischia -R,U,C
(tenuicaudata)

Chironomus (1) -J
Glystotendipes -R,U,C



Chironomus (2) -J
Tendipes - R,J,C
(limnochironomus sp.)

Chironomus (2) -J
Tendipes - R,U,C
(modestus)

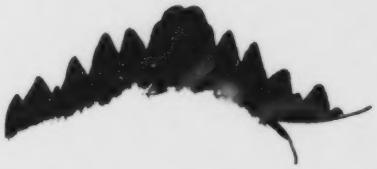
Chironomus (2) -J
Glyptotendipes-R,U,C
(polytomus)

CONTINUED

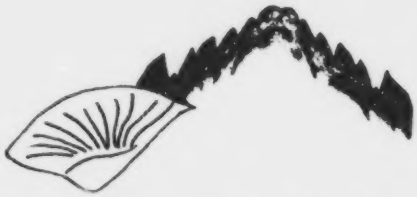
13 TEETH CONTINUED

Chironomus (2) -J
Glyptotendipes -R,U,C
(senelis)

Chironomus (2) -J
Harnischia -R,U,C
(tenuicaudata)



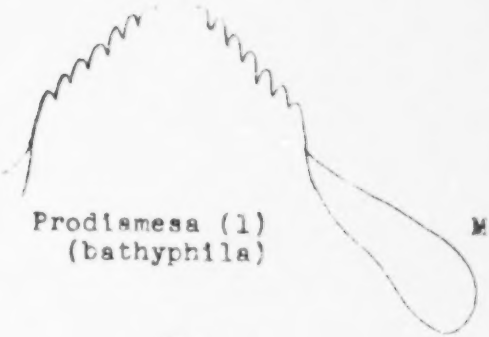
Chironomus (2) -J
Harnischia -R,U,C
(sp.1)



Chironomus (2) -J
Harnischia -R,U,C
(amachaerus)

14 TEETH

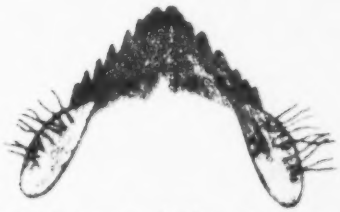
Prodiamesa (3)
(olivacea)



Prodiamesa (1)
(bathyphila)

Metriocnemus (3)
(knabi)

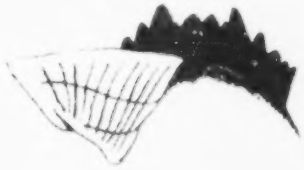
Spaniotoma (2) -J,U,C
Eukiefferiella -R
(brevinervis)



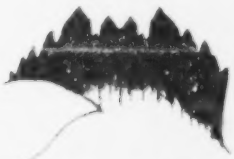
Spaniotoma (2) -J,U,C
Trichocladius -R
(sp.3)

Spaniotoma (1)- J,U,C
Diplocladius -R
(cultriger)

Spaniotoma (1)
(nivoriunda)



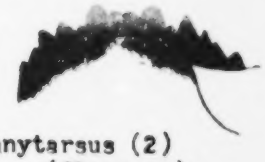
Chironomus (2) -J
Lauterborniella -R,U,C
(varipennis)



Chironomus (2) -J
Polypedilum -R,U,C
(ophioides)

Chironomus (2) -J
Polypedilum -R,U,C
(fallax group)

Chironomus (1) -J
Polypedilum -R,U,C
(flavus)



Tanytarsus (2)
(flavipes)

Tanytarsus (2)
(sp.2)

Chironomus (2) -J
Harnischia -R,U,C
(nais)

CONTINUED

14 TEETH CONTINUED

Anatopynia (3)
(dyari)

15 TEETH

Tanypus (1)
(stellatus)

Chironomus (1) -J
Cryptochironomus -R,U,C
(parilis)

Chironomus (2) -J
Tendipes -R,U,C
(riparius & militaris)

Chironomus (2) -J
Harnischia -R,U,C
(pseudotener)

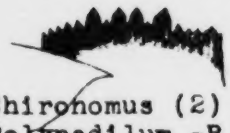
Chironomus (3) -J
Harnischia -R,U,C
(abortiva)

16 TEETH

Heptagyia (1)
(lurida)

Diamesa (2)
(fulva)

Chironomus (2) -J
Paratendipes -R,U,C
(albimanus)

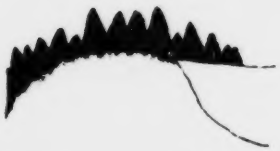


Chironomus (2) -J
Polypedilum -R,U,C
(sclaenum)

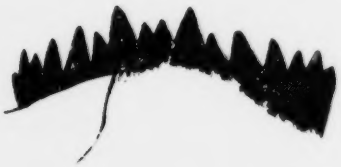
Chironomus (2) -J
Polypedilum -R,U,C
(tritum)

Chironomus (2) -J
Polypedilum -R,U,C
(sp. ?)

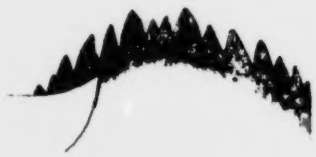
Chironomus (3) -J
Tanytarsus -R,U,C
(jucundus dimorphus)



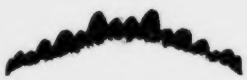
Tanytarsus (2)
(obediens)



Chironomus (2) -J
Tanytarsus -R,U,C
(sp.1)



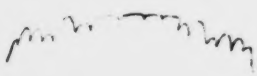
Chironomus (2) -J
Tanytarsus -R,U,C
(sp.2)



Chironomus (3) -J
Tanytarsus -R,U,C
(nigricans)

Chironomus (1) -J
Stenochironomus -R,U,C

Chironomus (1) -J
Tanytarsus -R,U,C
(flavicingula)

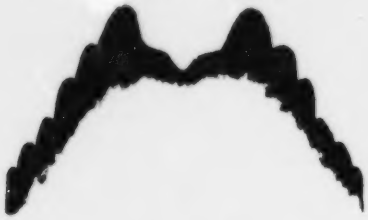


Chironomus (1) -J
Tanytarsus -R,U,C
(flavicingula) worn down

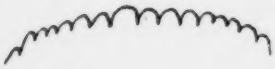
Chironomus (1) -J
Paratendipes -R,U,C
(albimanus)

CONTINUED

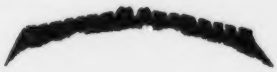
16 TEETH CONTINUED



Chironomus (1)
(quadripuctatus)



Chironomus (1) -J
Polypedilum -R,U,C
(fallax)



Chironomus (1) -J
Cryptochironomus -R,U,C
(sp. d)

Chironomus (2)- J
Harnischia -R,U,C
(sp. 3)

17 TEETH

Diamesa (1)
(fulva)

Spaniotoma (1) -J,U,C
Smittia -R
(sp.E)

18 TEETH

No Known Genera

19 TEETH

Diamesa (3)
(nivoriunda)

Spaniotoma (1) -J
Hydrobaenus -R,U,C
(rivulorum)

20 TEETH

Podonomus (3)

21 THRU 24 TEETH

No Known Genera

25 TEETH

Podonomus (2) -J
Lasiodiamesa -R,U,C
(sphagnicola)

Trichotanypus (2)
(posticalis)

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